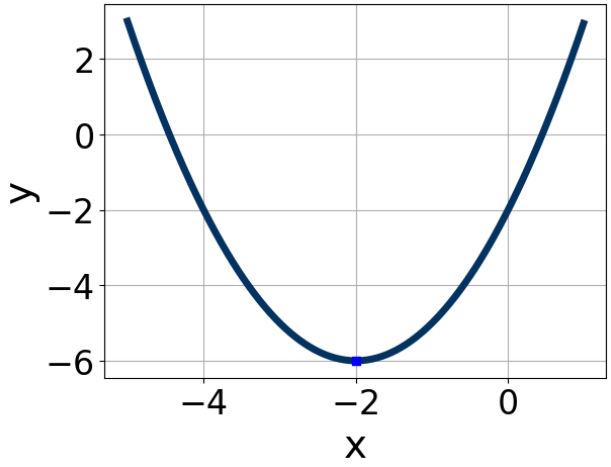
1. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [0.9, 1.7]$, $b \in [-5, 1]$, and $c \in [-3, 2]$

B. $a \in [-1.1, -0.7]$, $b \in [-5, 1]$, and $c \in [-12, -9]$

C. $a \in [0.9, 1.7]$, $b \in [-5, 1]$, and $c \in [10, 11]$

D. $a \in [-1.1, -0.7]$, $b \in [1, 6]$, and $c \in [-12, -9]$

E. $a \in [0.9, 1.7]$, $b \in [1, 6]$, and $c \in [-3, 2]$

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2. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$25x^2 - 60x + 36 = 0$$

A. $x_1 \in [29.89, 30.07]$ and $x_2 \in [28.82, 30.39]$

B. $x_1 \in [0.29, 0.4]$ and $x_2 \in [2.8, 5.36]$

C. $x_1 \in [0.98, 1.27]$ and $x_2 \in [0.98, 1.24]$

D. $x_1 \in [0.5, 0.69]$ and $x_2 \in [2, 2.82]$

E. $x_1 \in [0.18, 0.24]$ and $x_2 \in [5.82, 8.14]$

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3. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$54x^2 - 57x + 10$$

A. $a \in [0.39, 1.72]$, $b \in [-45, -42]$, $c \in [0.4, 2.2]$, and $d \in [-14, -6]$

B. $a \in [1.62, 2.98]$, $b \in [-7, -1]$, $c \in [26.1, 27.8]$, and $d \in [-3, 0]$

C. $a \in [5.69, 6.25]$, $b \in [-7, -1]$, $c \in [7.2, 9.6]$, and $d \in [-3, 0]$

D. $a \in [11.54, 12.85]$, $b \in [-7, -1]$, $c \in [3.6, 6.5]$, and $d \in [-3, 0]$

E. None of the above.

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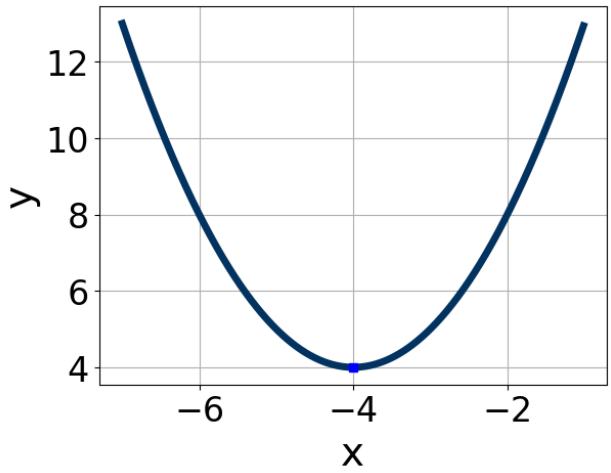
4. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-1.8, 0.9]$, $b \in [-9, -4]$, and $c \in [-15, -11]$

B. $a \in [-0.6, 1.1]$, $b \in [-9, -4]$, and $c \in [17, 22]$

C. $a \in [-0.6, 1.1]$, $b \in [7, 13]$, and $c \in [17, 22]$

D. $a \in [-1.8, 0.9]$, $b \in [7, 13]$, and $c \in [-15, -11]$

E. $a \in [-0.6, 1.1]$, $b \in [-9, -4]$, and $c \in [12, 13]$

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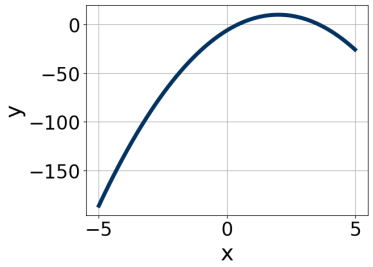
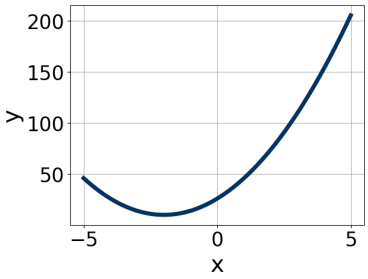
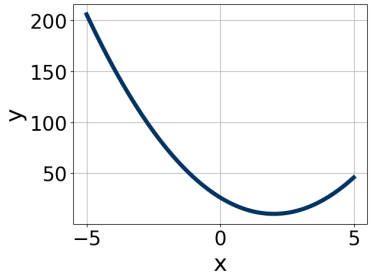
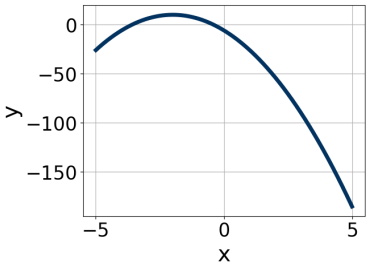
5. Graph the equation below.

$$f(x) = -(x+2)^2 + 10$$

A.


C.


B.


D.


E. None of the above.

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6. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$18x^2 + 10x - 7 = 0$$

A. $x_1 \in [-25.15, -23.62]$ and $x_2 \in [23.8, 26]$

B. $x_1 \in [-0.79, 0.13]$ and $x_2 \in [0.9, 1.5]$

C. $x_1 \in [-17.42, -17.07]$ and $x_2 \in [6.4, 8.4]$

D. $x_1 \in [-0.99, -0.95]$ and $x_2 \in [-0.2, 0.9]$

E. There are no Real solutions.

---

7. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$20x^2 - 21x - 54 = 0$$

A. $x_1 \in [-3.95, -3.57]$ and $x_2 \in [0.52, 2.17]$

B. $x_1 \in [-24.11, -23.57]$ and $x_2 \in [44.9, 46.39]$

C. $x_1 \in [-6.19, -5.88]$ and $x_2 \in [-0.33, 0.48]$

D. $x_1 \in [-1.76, -1.17]$ and $x_2 \in [2.03, 2.41]$

E. $x_1 \in [-0.8, 0.32]$ and $x_2 \in [5.83, 7.15]$

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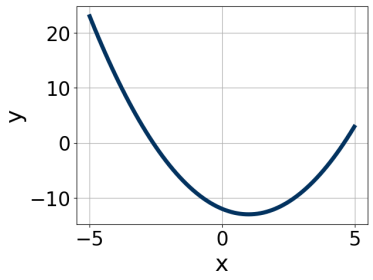
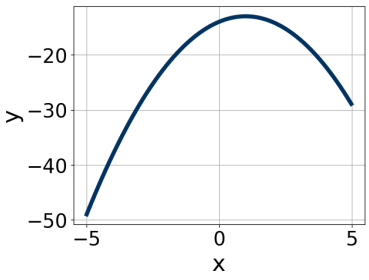
8. Graph the equation below.

$$f(x) = -(x-1)^2 - 13$$

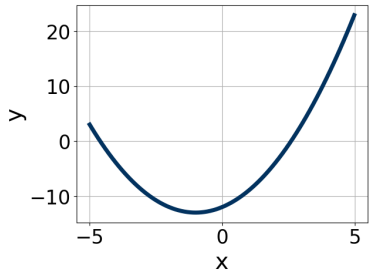
A.



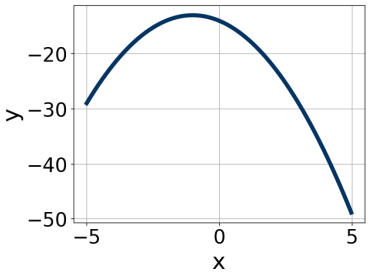
C.



B.



D.



E. None of the above.

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9. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$12x^2 + 12x - 7 = 0$$

A. $x_1 \in [-0.86, 0.31]$ and $x_2 \in [0.8, 2.3]$

B. $x_1 \in [-22.76, -21.95]$ and $x_2 \in [21.3, 22.1]$

C. $x_1 \in [-1.58, -0.97]$ and $x_2 \in [-1.3, 0.9]$

D. $x_1 \in [-17.73, -16.66]$ and $x_2 \in [3.1, 6.8]$

E. There are no Real solutions.

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10. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$36x^2 - 60x + 25$$

A. $a \in [-2.3, 2.1]$, $b \in [-31, -29]$, $c \in [0.8, 1.8]$, and $d \in [-34, -25]$

B. $a \in [2.9, 4]$, $b \in [-5, -2]$, $c \in [11.6, 13.9]$, and $d \in [-6, -2]$

C. $a \in [4.9, 6.6]$, $b \in [-5, -2]$, $c \in [3.4, 6.6]$, and $d \in [-6, -2]$

D. $a \in [16.9, 18.3]$, $b \in [-5, -2]$, $c \in [1.5, 3.2]$, and $d \in [-6, -2]$

E. None of the above.
